

ADDITIONAL FEE:

No additional fees are believed required in connection with this response; however, should it be determined that a fee is due, authorization is hereby given to charge any such fee to our Deposit Account No. 01-0268.

REMARKS

In the last Office Action, claims 7-8 and 10-11 were withdrawn from further consideration as being directed to a non-elected invention. The specification and claim 1 were objected to as containing informalities. Claims 1-2 were rejected under 35 U.S.C. §102(a), (e) as being anticipated by Hayashi (US 2004/0107577). Acknowledgment was made of applicants' claim for foreign priority under 35 U.S.C. §119 and receipt of the priority document, thereby perfecting the foreign priority claim.

In accordance with this response, the specification has been revised to correct the informalities noted by the Examiner and to conform the headings to U.S. practice. Original claims 1-2 have been amended to further patentably distinguish from the prior art of record, overcome the objection, and in formal respects to improve the wording and bring the claims into better conformance with U.S. practice. New claims 13-30 have been added to provide a fuller scope of coverage. Non-elected claims 7, 8, 10 and 11² have been canceled without prejudice or admission and subject to applicants' right to file a continuing application to pursue the subject matter of the non-elected claims.

² Claims 3-6, 9 and 12 were canceled in a preliminary amendment filed August 16, 2006.

Amended Original Claims 1-2

Applicants respectfully traverse the anticipatory rejection based on Hayashi and submit that amended claims 1-2 patentably distinguish over Hayashi.

Anticipation under 35 U.S.C. §102 requires the disclosure in a single prior art reference of each element of the claim under consideration. See, W.L. Gore & Associates v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Stated otherwise, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. This standard is clearly not satisfied by Hayashi which, as pointed out below, does not disclose or describe the specific features recited in amended claims 1-2.

Amended independent claim 1 relates to a working fluid injection apparatus for a fluid dynamic pressure bearing. With reference to the exemplary embodiment shown in Figs. 1-6, the wording fluid injection apparatus 1 is used for injecting a working fluid 2 into a gap C between a housing 5 and a shaft 4 in a bearing unit 6 of the fluid dynamic pressure bearing 3. The housing 5 has an opening portion 10a and the shaft 4 is held in the housing 5 with an end of the shaft 4 exposed from the opening portion 10a. The gap C forms a ring-shaped open portion 11 in the opening portion 10a of the housing 5.

As shown in Figs. 4-6, the working fluid injection apparatus 1 has an adapter 34 configured to support the bearing unit 6 in a state in which the ring-shaped open portion 11 of the bearing unit housing 5 opens upwards. A cover member 35 has an upper opening (top of cover member in Figs. 4-6), a lower opening 35a larger than the ring-shaped open portion 11a of the bearing unit housing 5, and a tapered inner surface 35b with a radial dimension that increases gradually from the lower opening 35a to the upper opening. The cover member 35 is configured to be mounted in contact with an upper surface 5a of the bearing unit housing 5 when the bearing unit 6 is supported by the adapter 34 so that the lower opening of the cover 35a surrounds the ring-shaped open portion 11a of the bearing unit housing 5 and so that an outer peripheral surface of the exposed end of the bearing unit shaft 4 and the tapered inner surface 35b of the cover member 35 form a reservoir portion 39 that communicates with the ring-shaped open portion 11a of the bearing unit housing 5 and that is configured to store the working fluid 2.

A chamber 14 sealably holds the bearing unit 6 onto which the cover member 35 is mounted, and a valve device 22 opens and closes an internal space of the chamber 14 with respect to a surrounding external space thereof. An exhaust device 15 exhausts air from the internal space of the chamber 14 to place the internal space of the chamber 14 in a predetermined decompressed state. A dispenser 17 dispenses the working fluid 2

into the reservoir portion 39 when the chamber 14 sealably holds the bearing unit 6 and the internal space of the chamber 14 is in the predetermined decompressed state.

Hayashi discloses an apparatus for charging oil into a fluid dynamic pressure bearing unit that includes a housing 10 accommodating a shaft with a gap therebetween and a ring-shaped member 11 on top surface of the housing 10 (Figs. 1-5). However, Hayashi does not disclose or suggest the specific structure of the apparatus recited in amended independent claim 1.

For example, the apparatus of Hayashi does not have an adapter that supports the bearing unit, as required by amended claim 1. Hayashi also does not disclose or suggest the specific structure of the cover member and corresponding function recited in amended claim 1. In this regard, the Examiner interpreted the ring-shaped member 11 in Hayashi as corresponding to a cover that is disposed in contact with an upper surface of the housing 10. However, the ring-shaped member 11 in Hayashi does not have the specific structure of the cover member recited in amended claim 1, including an upper opening, a lower opening, and a tapered inner surface with a radial dimension that increases gradually from the lower opening to the upper opening, the cover member being configured to be mounted in contact with an upper surface of the bearing unit housing when the bearing unit is supported by the adapter so that the lower opening of the cover member surrounds the ring-shaped open portion of the bearing unit

housing and so that an outer peripheral surface of the exposed end of the bearing unit shaft and the tapered inner surface of the cover member form a reservoir portion that communicates with the ring-shaped open portion of the bearing unit housing and that is configured to store a working fluid.

Since Hayashi does not disclose or describe that foregoing structure of the working fluid injection apparatus recited in amended independent claim 1, the reference does not anticipate the claim. Moreover, Hayashi does not suggest the claimed subject matter and, therefore, would not have motivated one skilled in the art to modify the Hayashi's apparatus to arrive at the claimed invention.

Claim 2 depends on and contains all of the limitations of amended independent claim 1 and, therefore, distinguishes from Hayashi at least in the same manner as set forth above for amended claim 1.

In view of the foregoing, applicants respectfully request that the rejection of claims 1-2 under 35 U.S.C. §102(a), (e) as being anticipated by Hayashi be withdrawn.

New Claims 13-30

New independent claim 19 is directed to a working fluid injection apparatus and requires an adapter configured to support the bearing unit in a state in which an end portion of the bearing unit shaft protrudes from an open portion of the bearing unit housing, and a cover member having an upper opening, a lower

opening, and a tapered inner surface with a radial dimension that increases gradually from the lower opening to the upper opening, the cover member being configured to be mounted in contact with an upper surface of the bearing unit housing when the bearing unit is supported by the adapter so that the lower opening of the cover member surrounds the open portion of the bearing unit housing and so that the protruding end portion of the bearing unit shaft and the tapered inner surface of the cover member form a reservoir portion that communicates with the open portion of the bearing unit housing and that is configured to store a working fluid. No corresponding structure is disclosed or suggested by the prior art of record as set forth above for amended independent claim 1.

New independent claim 26 is directed to an apparatus and requires an adapter supporting the bearing unit housing at the closed end thereof, and a cover member having an upper opening, a lower opening, and a tapered inner surface with a radial dimension that increases gradually from the lower opening to the upper opening, the cover member being mounted in contact with the plate of the bearing unit housing so that the lower opening surrounds the portion of the open end through which the end of the bearing unit shaft protrudes and so that the protruding end of the bearing unit shaft and the tapered inner surface of the cover member form a reservoir portion that communicates with the portion of the open end of the bearing unit housing and that is

configured to store a working fluid. Again, no corresponding structure is disclosed or suggested by the prior art of record as set forth above for amended independent claim 1.

New dependent claims 13-18, 20-25 and 27-30 depend on and contain all of the limitations of independent claims 1, 19 and 26, respectively, and, therefore, distinguish from the prior art of record at least in the same manner as set forth above for independent claims 1, 19 and 26.

Moreover, there are separate grounds for patentability of several of the new dependent claims which are directed to the specific taper angle of the tapered inner surface of the cover member (claims 13-15 and 21); the specific control means of the working fluid injection apparatus and corresponding function (claims 16-18, 22); the specific structural and positional relationship between the mounting base, adapter and bearing unit housing (claims 23, 28); the specific positional relationship between the cover member and bearing unit housing (claims 24, 29); and the specific dimensional relationship between the reservoir portion (formed between the tapered inner surface of the cover member and the shaft) and the gap (formed between the housing and shaft of the bearing unit). No corresponding features are disclosed or suggested by the prior art of record.

In view of the foregoing, the application is now believed to be in allowable form. Accordingly, favorable reconsideration and passage of the application to issue are respectfully requested.

Respectfully submitted,

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MAILING CERTIFICATE

I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450, on the date indicated below.

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AUGUST 9, 2010

Date